



One-to-One Computing Has Failed Our Expectations

The laptops are being used as add-ons to existing curriculum.

ONE-TO-ONE COMPUTING HAS not lived up to its expectations. Providing each student with a laptop computer has not resulted in significant achievement gains. In an analysis of previous studies on 1:1, Boston College researchers found that the impact of a one-to-one computing implementation is largely a function of the classroom teacher. Some teachers know how to make good use of a one-to-one situation, and some don't. If extracting value from an innovation is dependent on the teacher, then the value added by the innovation per se is limited.

But the promise of one-to-one was that it would raise the bar for all students. It would engage students because they love technology, and that engagement would translate into better performance (e.g., increased attendance, decreased behavior problems and increased test scores).

What is the problem?

The answer to that question lies in another question, one that we have heard students ask who are participating in one-to-one rollouts: "Do I need to bring my laptop to class today?" Forget for a moment that schlepping a 7-pound laptop around can truly be a serious challenge for a 50-pound fifth-grader. That question is symptomatic of how the laptops are being used in the classroom. That is, they are being used as "add-ons" to the existing curriculum, to lessons designed with textbooks and traditional media as the anchor. For example, in a lesson on rainforests, a teacher might add a webquest to the task list, or an Excel exercise to a lesson on fractions and decimals, or a writing assignment to a lesson on forms of government. But the lion's share of the learning activities in each of these lessons is still done away from the lap-



top; textbooks and traditional media are still the anchoring media, and the lesson comes straight from an existing collection of lessons. Yes, each child has a laptop, but its use is relatively ancillary, and thus, "Do I need to bring my laptop to class today" is, sadly, a perfectly reasonable question.

For a 21st-century knowledge-worker, however, a computing device (e.g., laptop, smartphone) is an essential tool, not an add-on. Typically, 21st-century knowledge-workers use that device all day long. It is the exception to work off the computer. Indeed, they could not do their jobs effectively without using the computer.

Redefining the Curriculum

To make the computer an essential tool in the classroom, and thus to realize the potential value added from technology, we need to redefine the curriculum in terms of what gets taught, and we need to redefine how it gets taught. A focus on facts and recall, on drill and practice, does not leverage the value of the computer. Rather, having students investigate and collaborate in order to develop a deep, integrated understanding of underlying processes needs to be the focus of a one-to-one computing

classroom. In the one-to-one classrooms in which we work, where students use their mobile learning device upwards of 80 percent of the school day, we have seen attendance go up, behavior problems go down, and test scores jump by 30 percent.

Schools have long dropped computers into classrooms where they are used as add-ons to an existing curriculum and pedagogy—with little or no impact. Increasing the number of computers dropped into a classroom is not the answer. But when the curriculum and pedagogy are defined for the teacher—and that curriculum and pedagogy take advantage of a one-to-one classroom—then the results are much less dependent on the teacher. Only then can the value added by the one-to-one program be realized for *all* students. **DA**

www.DistrictAdministration.com
Visit Cathleen and Elliot's Tech
Disruptions blog.

Cathleen Norris is a Regents Professor at the University of North Texas and co-founder and chief education architect at GoKnow Learning in Ann Arbor, Mich. Elliot Soloway is Arthur F. Thurnau Professor at the University of Michigan and co-founder of GoKnow.

Copyright of District Administration is the property of Professional Media Group, LLC and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.